

from a stationary transmitter to multiple receiving facilities located at fixed points. When service is provided on a common carrier basis, subscriber supplied information is transmitted to points designated by the subscriber. When service is provided on a non-common carrier basis, transmissions may include information originated by persons other than the licensee, licensee-manipulated information supplied by other persons, or information originated by the licensee. Point-to-point radio return links from a subscriber's location to a MDS operator's facilities may be authorized in the 18,580 through 18,820 MHz and 18,920 through 19,160 MHz bands. Rules governing such operation are contained in subpart I of part 101 of this chapter, the Point-to-Point Microwave Radio Service.

(b) Unless otherwise directed or conditioned in the applicable instrument of authorization, Multipoint Distribution Service stations may render any kind of communications service consistent with the Commission's rules on a common carrier or on a non-common carrier basis, *Provided That*:

(1) Unless service is rendered on a non-common carrier basis, the common carrier controls the operation of all receiving facilities (including any equipment necessary to convert the signal to a standard television channel but excluding the television receiver); and

(2) Unless service is rendered on a non-common carrier basis, the common carrier's tariff allows the subscriber the option of owning the receiving equipment (except for the decoder) so long as:

(i) The customer provides the type of equipment as specified in the tariff;

(ii) Such equipment is in suitable condition for the rendition of satisfactory service; and

(iii) Such equipment is installed, maintained, and operated pursuant to the common carrier's instructions and control.

(c) The carrier's tariff shall fully describe the parameters of the service to be provided, including the degree of privacy of communications a subscriber can expect in ordinary service. If the ordinary service does not provide for complete security of transmission, the tariff shall make provision for

service with such added protection upon request.

[44 FR 60534, Oct. 19, 1979, as amended at 52 FR 27556, July 22, 1987; 61 FR 26676, May 28, 1996]

**§ 21.904 Transmitter power.**

(a) The maximum equivalent isotropically radiated power (EIRP) of a transmitter station in this service shall not exceed 2000 watts (33 dBW) except as provided in paragraph (b) of this section.

(b) If a station uses a transmitting antenna with a non-omnidirectional horizontal plane radiation pattern, the maximum equivalent isotropically radiated power (EIRP) in dBW in a given direction shall be determined by the following formula:

$$\text{EIRP} = 33 \text{ dBW} + 10 \log (360/\text{beamwidth})$$
 [where  $10 \log (360/\text{beamwidth}) \leq 6 \text{ dB}$ ].

Beamwidth is the total horizontal plane beamwidth of the transmitting antenna system in degrees, measured at the half-power points.

(c) An increase in station transmitter power, above currently-authorized or previously proposed values, to the maximum values provided in paragraphs (a) and (b) of this section, may be authorized, if the requested power increase would not cause harmful interference to any authorized or previously proposed co-channel or adjacent-channel station with a transmitter site within 80.5 kilometers (50 miles) of the applicant's transmitter site, or if an applicant demonstrates that:

(1) A station, that must be protected from interference, potentially could suffer interference that would be eliminated by increasing the power of the interfered-with station; and

(2) The interfered-with stations may increase its own power consistent with the rules; and

(3) The applicant requesting authorization of a power increase agrees to pay all expenses associated with the increase in power to the interfered-with station.

(d) For television transmission if the authorized bandwidth is 4.0 MHz or more for the visual and accompanying aural signal, the peak power of the accompanying aural signal must not exceed 10 percent of the peak visual

power of the transmitter. The Commission may order a reduction in aural signal power to diminish the potential for harmful interference.

[55 FR 46010, Oct. 31, 1990, as amended at 58 FR 44896, Aug. 25, 1993; 60 FR 36554, July 17, 1995; 60 FR 57367, Nov. 15, 1995]

#### **§ 21.905 Emissions and bandwidth.**

(a) A station transmitting a television signal shall not exceed a bandwidth of 6 MHz (for both visual signal and accompanying aural signal), and will normally employ vestigial sideband, amplitude modulation (C3F) for the visual signal, and frequency modulation (F3E) or (G3E) for the accompanying aural signal.

(b) For purposes other than standard television transmission, different types of emissions may be authorized if the applicant describes fully the modulation and bandwidth desired, and demonstrates that the bandwidth desired is no wider than needed to provide the intended service. However, in no event shall the necessary or occupied bandwidth, whichever is greater, exceed 6 MHz.

(c) Any licensee of a station in the 2150–2162 MHz or 2596–2644 MHz, 2650–2656 MHz, 2662–2668 MHz, or 2674–2680 MHz frequency bands, after notice and opportunity for hearing, may be required to use the frequency offset technique to avoid or to minimize harmful interference to another licensed station in the 2150–2162 MHz and 2596–2544 MHz, 2650–2656 MHz, 2662–2668 MHz, and 2674–2680 MHz frequency bands or to make other changes as provided in §§ 21.100, 21.107, 21.900, 21.901, 21.902, 21.904, 21.905(a), 21.905(b), 21.906, 21.907, and 21.908 of this part.

[44 FR 60534, Oct. 19, 1979, as amended at 49 FR 48700, Dec. 14, 1984; 55 FR 46011, Oct. 31, 1990; 56 FR 57818, Nov. 14, 1991]

#### **§ 21.906 Antennas.**

(a) Transmitting antennas shall be omnidirectional, except that a directional antenna with a main beam sufficiently broad to provide adequate service may be used either to avoid possible interference with other users in the frequency band, or to provide coverage more consistent with distribution of potential receiving points. When an applicant proposes to employ a direc-

tional antenna, the applicant shall provide the Commission with information regarding the orientation of the directional antenna, expressed in degree of azimuth, with respect to true north.

(b) The use of horizontal or vertical plane wave polarization, or right hand or left hand rotating elliptical polarization may be used to minimize the hazard of harmful interference between systems.

(c) Transmitting antennas located within 56.3 kilometers (35 miles) of the Canadian border should be directed so as to minimize, to the extent that is practical, emissions toward the border.

(d) Directive receiving antennas shall be used at all points and shall be elevated no higher than necessary to assure adequate service. Receiving antenna height shall not exceed the height criteria of part 17 of this chapter, unless authorization for use of a specific maximum antenna height (above ground and above mean sea level) for each location has been obtained from the Commission prior to the erection of the antenna. Requests for such authorization shall show the inclusive dates of the proposed operation. (See part 17 of this chapter concerning the construction, marking and lighting of antenna structures.)

[44 FR 60534, Oct. 19, 1979, as amended at 52 FR 37786, Oct. 9, 1987; 58 FR 44896, Aug. 25, 1993]

#### **§ 21.907 Transmission standards.**

(a) A licensee assigned a 6 MHz channel must be able to provide one type of monochrome and color television service which complies with the VHF transmission standards set forth in § 73.682(a) of this chapter, except that the provision of § 21.906(b) shall replace the requirements of § 73.682(a)(14) of this chapter.

(b) A licensee assigned a 4 MHz channel must be able to provide one type of monochrome and/or color television service which complies with VHF transmission standards set forth in § 73.682(a) of this chapter, except that:

(1) The provision of § 21.906(b) shall replace the requirements of § 73.682(a)(14) of this chapter, and

(2) The requirements of § 73.682 (a)(1), (a)(2), (a)(3), (a)(4), (a)(5), (a)(9), (a)(19),